



# Bison Oil Well Cementing Single Cement Surface Pipe

Date: 10/13/2014  
 Invoice #: 35055  
 API#  
 Foreman: Kirk Kallhoff

**Customer:** Anadarko Petroleum Corporation  
**Well Name:** thomsen 4n-18hz

County: Weld  
 State: Colorado  
 Sec: 7  
 Twp: 2n  
 Range: 65w

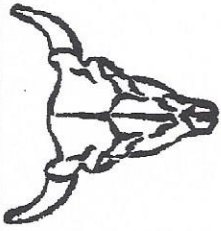
Consultant: toby  
 Rig Name & Number: major 42  
 Distance To Location: 15  
 Units On Location: 4030-3103/4024-3203  
 Time Requested: 100 am  
 Time Arrived On Location: 1100 pm  
 Time Left Location:

WELL DATA	Cement Data
Casing Size OD (in) : 9.625	Cement Name: BFN III
Casing Weight (lb) : 36.00	Cement Density (lb/gal) : 14.2
Casing Depth (ft.) : 1,327	Cement Yield (cuft) : 1.49
Total Depth (ft) : 1345	Gallons Per Sack: 7.48
Open Hole Diameter (in.) : 13.50	% Excess: 16%
Conductor Length (ft) :	Displacement Fluid lb/gal: 8.3
Conductor ID :	BBL to Pit:
Shoe Joint Length (ft) : 41	Fluid Ahead (bbls): 30.0
Landing Joint (ft) : 8	H2O Wash Up (bbls): 20.0
Max Rate:	Spacer Ahead Makeup
Max Pressure:	

Calculated Results	Displacement: 100.04 bbls (Casing ID Squared) X (.0009714) X (Casing Depth + Landing Joint - Shoe Joint)
<b>cuft of Shoe</b> 17.80 cuft (Casing ID Squared) X (.005454) X (Shoe Joint ft)	<b>Pressure of cement in annulus</b>
<b>cuft of Conductor</b> 0.00 cuft (Conductor Width Squared) -(Casing Size OD Squared) X (.005454) X (Conductor Length ft)	<b>Hydrostatic Pressure:</b> 978.93 PSI
<b>cuft of Casing</b> 752.31 cuft (Open Hole Squared)-(Casing Size Squared) X (.005454) X (Casing Depth - Conductor Length)	<b>Pressure of the fluids inside casing</b>
<b>Total Slurry Volume</b> 770.11 cuft (cuft of Shoe) + (cuft of Conductor) + (cuft of Casing)	<b>Displacement:</b> 554.50 psi
<b>bbls of Slurry</b> 137.16 bbls (Total Slurry Volume) X (.1781)	<b>Shoe Joint:</b> 30.25 psi
<b>Sacks Needed</b> 517 sk (Total Slurry Volume) ÷ (Cement Yield) X (% Excess Cement)	<b>Total</b> 584.74 psi
<b>Mix Water</b> 92.05 bbls (Sacks Needed) X (Gallons Per Sack) ÷ 42	<b>Differential Pressure:</b> 394.18 psi
	<b>Collapse PSI:</b> 2020.00 psi
	<b>Burst PSI:</b> 3520.00 psi
	<b>Total Water Needed:</b> 242.09 bbls

X Authorization To Proceed

Customers hereby acknowledges and specifically agrees to the terms and condition on this work order, including, without limitation, the provisions on this work order.



**Bison Oil Well Cementing  
Single Cement Surface Pipe**

Customer  
Well Name

Anadarko Petroleum Corporation  
thomsen 4n-18hz

INVOICE #  
LOCATION  
FOREMAN  
Date

35055  
Weld  
Kirk Kallhoff  
10/14/2014

**Treatment Report Page 2**

**DESCRIPTION OF JOB EVENTS**

	Displace 1			Displace 2			Displace 3			Displace 4			Displace 5		
	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI	BBLS	Time	PSI
Safety Meeting	0	102am	10	0			0			0			0		
MIRU	10	1110pm	90	10			10			10			10		
CIRCULATE	20	115am	100	20			20			20			20		
Drop Plug	30		110	30			30			30			30		
155 am	40		170	40			40			40			40		
M & P	50		240	50			50			50			50		
Time	60		300	60			60			60			60		
Sacks	70		380	70			70			70			70		
122 am	80		440	80			80			80			80		
152 am stop	90		460	90			90			90			90		
	100		450	100			100			100			100		
	110			110			110			110			110		
% Excess	120			120			120			120			120		
Mixed bbls	130			130			130			130			130		
Total Sacks	140			140			140			140			140		
bbl Returns	150			150			150			150			150		
Water Temp															

Notes:

bumped plug at 100.2 bbls at 220 am 1430 psi

137.1 bbls slurry

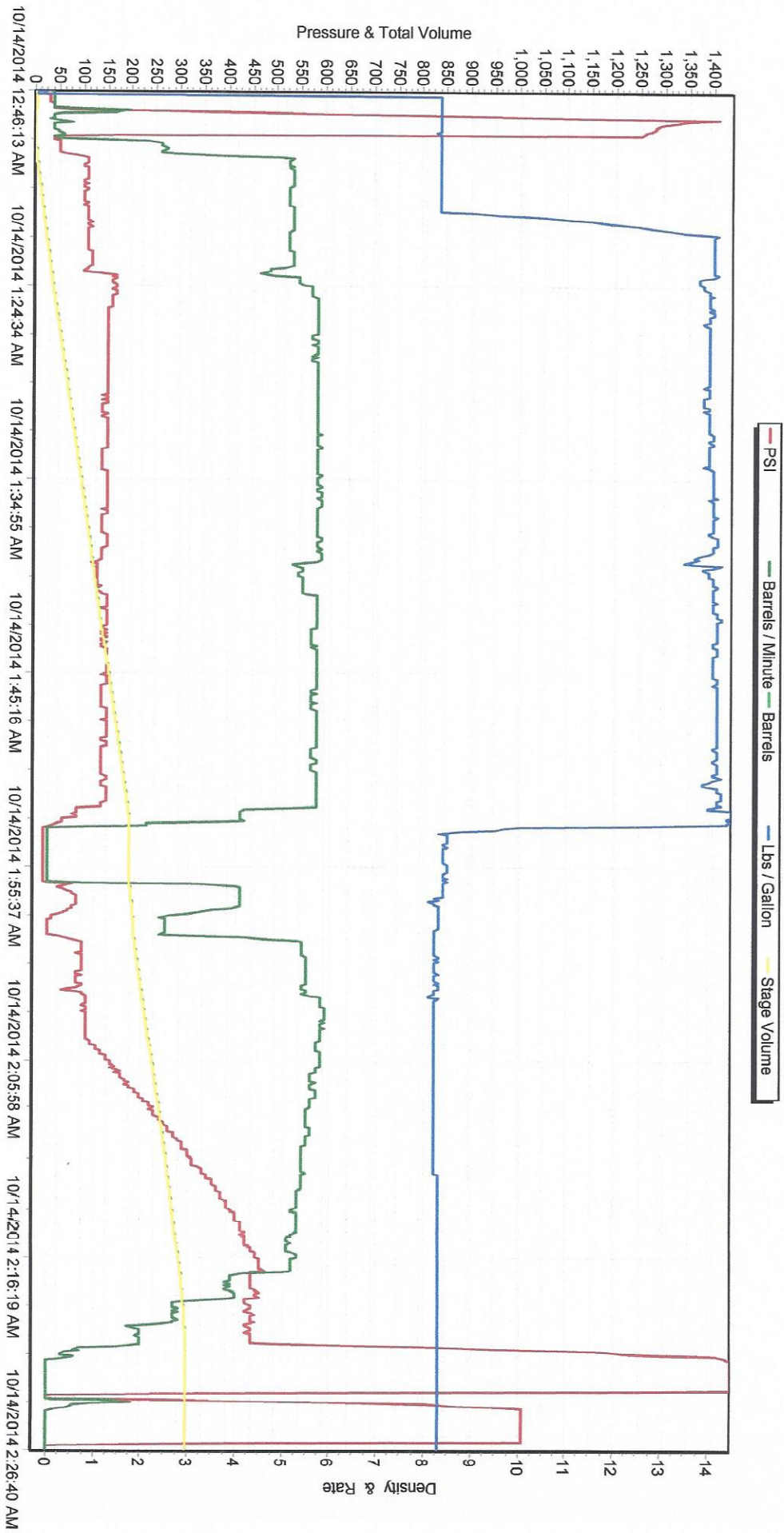
floats held

X Title

X

Date 10-14-14

# M/D TOTCO 2000 SERIES



## Release and Indemnification

Customer acknowledges and assumes the risks associated with oil well drilling, cementing and acidizing, including, without limitation, destabilization, loss of production, contamination, fracturing and loss of well control. Customer agrees to release Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from any and all liability for any and all damages whatsoever to property of any kind owned by, in the possession of, or leased by customer and those persons or entities customer has the ability to bind by contract. Customer also agrees to indemnify and hold harmless Bison Oil Well Cementing, Inc., Bison Energy Services, Inc., its agents, employees and assigns, from and against any and all liability, claims, costs, expenses, attorneys fees and damages whatsoever for claims, costs, expenses, attorneys fees and damages whatsoever for personal injury, illness, death, property damage and loss resulting from: loss or reduction of production, destabilization loss of oil well control, failure of or contamination by acid stimulation, hydraulic fracturing, cementing, pumping services, incompatible fluid or other processes to stimulate, complete or end production, and/or any other condition. Customer's release, indemnity and hold harmless obligation shall apply even if the liability and claims are caused by the sole, concurrent, active or passive negligence, fault, or strict liability of Bison Oil Well Cementing, Inc. and/or Bison Energy Services, Inc. or any defect in the data, products, supplies, materials or equipment furnished by Bison Oil Well Cementing, Inc. whether in the design, manufacturing, maintenance, or marketing thereof or from failure to warn of such defect. In the event that any portion of this release and indemnity is found by a court of competent jurisdiction to be inoperable or unenforceable, the remaining portions and provisions shall apply, and customer agrees that the contract price herein shall be the limit of Bison Oil Well Cementing, Inc.'s liability, if any.